

IN THE DRAWINGS:

Applicants request that Fig. 4 be approved by the Examiner. Fig. 4 has been corrected to show a device 33 and a device 34, instead of two devices erroneously labeled 33. This correction does not present new matter.

REMARKS

Applicants appreciate the time taken by the Examiner to review Applicants' present application. Claims 1, 11, 18, and 22 have been amended. No new matter has been added. This application has been carefully reviewed in light of the Official Action mailed April 15, 2005. Applicants respectfully request reconsideration and favorable action in this case.

Rejections under 35 U.S.C. § 112

Claims 1 and 22 stand rejected under 35 U.S.C. § 112, second paragraph. The claims have been amended to obviate the rejection. No new matter has been added. In particular, the preambles of the claims have been amended to recite "...method of using a router to cache inquiry data corresponding to a target device in a network having a plurality of client devices, the method comprising:..." Consequently, Applicants assert Claims 1 and 22 are not indefinite. Therefore, Applicants therefore respectfully request the Examiner withdraw the rejection.

Rejections under 35 U.S.C. § 102

Claims 1-22 stand rejected as anticipated by U.S. Patent No. 6,324,584 ("Mandalia"). The standard for "anticipation" is one of fairly strict identity. A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Bros. V. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987), MPEP § 2131. Mandalia does not disclose each and every element set forth in the pending claims, some distinctions of which are set forth below.

Claims 1-10, 22 – Storing Inquiry data corresponding to a target device in a cache memory

Independent Claim 1 recites:

[a] method of using a router to cache inquiry data corresponding to a target device in a network having a plurality of client devices, the method comprising:  
storing inquiry data corresponding to a target device in a cache memory;  
receiving a request for the inquiry data corresponding to the target device;  
reading the inquiry data from the cache memory; and  
providing the inquiry data corresponding to the target device in response to the request.

Independent Claim 22 recites similar limitations. Thus, independent Claims 1 and 22 recite using a router to store inquiry data corresponding to a target device in a cache memory. As described in the specification, inquiry data relates to the target device itself. Moreover, as recited by paragraph [0005] of the specification, inquiry data related to the target device may include serial number, manufacturer, configuration, version number, or similar data. Thus, the instant invention recites storing target device inquiry data, where inquiry data corresponds to the target device.

A request for inquiry data, or inquiry command, is not simply a request for data stored on a storage device. An inquiry command is a command to which a set of data about the storage device is returned to the issuing host. The SCSI standard, for example, provides an inquiry command for the SCSI protocol to which particular data corresponding to the target device is returned. In particular, SCSI INQUIRY DATA includes: an implemented options byte, vendor identification field, product identification field, product revision level field, and vital product data, i.e., more extensive product reporting. Thus, inquiry data provides information about the target device.

Inquiry commands may be submitted for various reasons. For example, when a new host is booted, it checks to see which other devices are connected to the network. Hosts may also periodically use inquiry commands to obtain information regarding the availability of devices on the network. If a device responds to the inquiry command, the host will receive the responsive inquiry data and will be aware that the device is available. If the device does not respond, the host may assume either that the device is no longer connected to the network, or that the device is no longer functioning properly.

Inquiry commands submitted to sequential devices can be problematic. An inquiry command may be submitted to a sequential device just after the device has received a command that will take a substantial amount of time to process. Consequently, the inquiry command may time out prior to the completion of the previously received command. As a result, the host will incorrectly assume the device is no longer operational or no longer connected to the network, even though it is both connected and operational.

In summary, inquiry data pertains to the target device itself, and inquiry commands may be issued to check network configuration. Inquiry commands issued to sequential devices may time out if received following a time-consuming command, thus providing erroneous information to the command-issuing hosts. The instant invention can eliminate, or at least reduce, this problem by using a router to cache target device inquiry data.

Mandalia does not deal with inquiry commands and inquiry data. Rather, Mandalia discloses receiving a request from a client machine to access data, such as a web page, at a remote server location having an address. Mandalia recites, “[i]n particular, each time an Internet page is received and transmitted by the router, the router captures and stores in the mass storage medium, any page that conforms with a pre-determined profile selection” (Mandalia – col. 2, lines 15-19). Thus, the data retrieved and stored by Mandalia appears to be web page data. Mandalia does not appear to teach or suggest retrieving and/or storing inquiry data corresponding to a target device as claimed. For example, a cited portion of Mandalia recites, “...present locally on the mass storage device. If so, the locally stored data is transmitted to the client machine which initiated the subsequent request. If not, the router retrieves the new requested data from its respective server or web site” (Mandalia – col. 2, lines 51-54). The cited requested data does not appear to include inquiry data corresponding to a target device, but includes data stored by a web server.

For at least the above-mentioned reasons, Applicants assert that Mandalia does not teach or suggest the claimed limitation of storing inquiry data corresponding to a target device in a cache memory. Further, Applicants assert that Mandalia does not and cannot teach or suggest the other limitations of Independent Claims 1 and 22 because Mandalia does not teach or suggest inquiry data. Claims 2-9 depend from Independent Claim 1, and thus recite the limitations of Claim 1. Applicants assert that Claims 1-10 and 22 are not anticipated by Mandalia.

Claims 11-19 – A device configured to provide cached inquiry data corresponding to a busy target device

It is noted that Claims 11 and 18 have been amended to correct typographical errors. In particular, Claim 11 has been amended to recite “a cache memory” instead of a “memory.” Without this amendment, claims 15, 16, and 18 lack antecedent basis as they each recite “the cache memory.” Claim 18 recited not only “the cache memory” but also “the cache.” Consequently, Claim 18 has been amended to recite “the cache” for consistency. These amendments do not present new matter.

Independent Claim 11 recites:

[a] device comprising:

- a router configured to route data between one or more hosts and one or more target devices; and
- a cache memory coupled to the router;
- wherein the router is configured to store inquiry data received from the one or more target devices and to provide at least a portion of the stored inquiry data in response to a request for inquiry data corresponding to one of the target devices that is busy.

Thus, Independent Claim 11 recites a device having a router configured to route inquiry data between hosts and target devices. The router is further configured to store inquiry data received from one or more target devices. Furthermore, the router is configured to provide at least a portion of the stored inquiry data in response to a request for inquiry data when the inquiry data is requested of a busy target device. The flow chart shown in FIG. 5 of the specification clearly shows retrieval of inquiry data performed when the target device is busy. Yet, if the target device is not busy, the inquiry data is retrieved directly from the target device. Thus, the instant invention recites a device having a router which routes data, stores inquiry data, and, on behalf of busy target devices, provides inquiry data.

Mandalia does not deal with inquiry commands or inquiry data. Further, Mandalia does not teach or suggest a router configured to provide data on behalf of busy target devices. Rather, Mandalia teaches a router and a mass storage device where the router is configured to route data between clients and remote servers. Although Mandalia does appear to describe searching for data/address on a mass storage device and retrieving data from the mass storage

device if found, Mandalia does not teach or suggest initiating such a search and retrieval based upon whether a target device is busy as claimed. The cited FIGS. 2 and 3 of Mandalia show a flow chart which fails to indicate a decision block for determining whether a target device is busy. Mandalia appears to disregard entirely whether a remote server from which data is requested is busy. Mandalia retrieves requested data from the remote server only if the data is not found stored within the mass storage device. The cited portions used in the rejections of claims 11-19 do not recite the claimed device having a router which routes data, stores inquiry data, and provides inquiry data on behalf of busy target devices.

For at least the above-mentioned reasons, Applicants assert that Mandalia does not teach or suggest the claimed device having a router which routes data, stores inquiry data, and provides inquiry data on behalf of busy target devices. Claims 12-19 depend from Independent Claim 11, and thus recite the limitations of Claim 11. Applicants assert that Claims 11-19 are not anticipated by Mandalia.

Claims 20-21 – A storage area network including at least one sequential access device

Independent Claim 20 recites:

A storage area network comprising:  
one or more host devices;  
one or more sequential access devices; and  
circuitry coupled between the one or more host devices and the one or more sequential access devices and coupled to a cache memory;  
wherein the circuitry is configured  
to receive from a first one of the host devices a request for inquiry data corresponding to a targeted one of the sequential access devices, and  
to return inquiry data from the cache memory to the first host device.

Thus, independent Claim 20 recites a storage area network having one or more sequential access devices and circuitry configured to receive from a first host device a request for inquiry data corresponding to a sequential access device. The claimed circuitry is also configured to return inquiry data to the first host device. As described in paragraph [0004] of the specification, a sequential access device is a device that is sequentially accessed, such as a tape drive, rather than one which can be randomly accessed, such as a disk drive. Sequential access devices are configured to sequentially process requests for data received from hosts.

Mandalia does not deal with sequential storage devices and Mandalia does not deal with inquiry commands or inquiry data. Mandalia appears to be concerned exclusively with web page data. Web page data that is served would not be stored on a sequential storage device because web page data is generally accessed randomly (e.g., from a hard drive). In contrast, Mandalia appears to be concerned with random access storage devices such as optical storage media and magnetic hard disks. Consequently, Mandalia does not and cannot teach or suggest the claimed storage area network which receives a request for inquiry data and returns inquiry data corresponding to a sequential access device. In contrast to this claimed limitation, Mandalia appears to teach a request from a client machine for data at a remote server location having an address. Mandalia provides no teaching or suggestion that the request is an inquiry command or that the remote server location is a sequential access device.

For at least the above-mentioned reasons, Applicants assert that Mandalia does not teach or suggest the claimed storage area network having one or more host devices, one or

more sequential access devices, and circuitry to couple the hosts and sequential access devices to a cache memory where the circuitry is configured to receive from a first host device a request for inquiry data corresponding to a sequential access device and where the circuitry is further configured to return inquiry data from the cache memory to the first host device. Claim 21 depends from Independent Claim 20, and thus recites the limitations of Claim 20. Applicants assert that Claims 20-21 are not anticipated by Mandalia.

Applicants assert that Claims 1-22 are patentably distinct in view of the cited art. Consequently, Applicants respectfully request withdrawal of the rejection of Claims 1-22. If the Examiner disagrees and maintains the rejection, Applicants respectfully request the Examiner distinctly point out each and every feature and limitation unique to the instant invention as described above.

Applicants have now made an earnest attempt to place this case in condition for allowance. Other than as explicitly set forth above, this reply does not include an acquiescence to statements, assertions, assumptions, conclusions, or any combination thereof in the Office Action. For the foregoing reasons and for other reasons clearly apparent, Applicants respectfully request full allowance of Claims 1-22. The Examiner is invited to telephone the undersigned at the number listed below for prompt action in the event any issues remain.

The Director of the U.S. Patent and Trademark Office is hereby authorized to charge any fees or credit any overpayments to Deposit Account No. 50-3183 of Sprinkle IP Law Group.

Respectfully submitted,

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